

# Get Started with PTC-04 programmer

## Introduction

This document is your guide through all documentation, tools, firmware, libraries, etc. ...

The target of this document is that you will understand how the environment is created and how \ where you can find the correct information to answer your questions.

## Contents

Get Started with .....	1
PTC-04 programmer .....	1
Introduction .....	1
Contents.....	2
Hardware .....	3
Main board .....	3
Daughter board .....	3
Contents of a PTC04 Set .....	3
Software.....	4
Firmware Layer.....	4
PSF Layer (DLL) .....	4
Requirements .....	4
Installation of software.....	4
Tools.....	5
MPT Platform .....	5
PTC04 User Interface .....	5
<i>Firmware loader</i> .....	5
<i>Calibrator</i> .....	5
<i>Firmware Commander</i> .....	5
<i>Test Program</i> .....	5
Validity and updates.....	5
CD PTC-04 directory structure.....	6
Appendix A: Structure of Software and Documentation .....	7
Contact.....	8
Disclaimer.....	8

## Hardware

The PTC04 is developed in order to be compatible with most of our Melexis products. Actually, we target being able to test not only our current products but also all our future Products.

Due to the fact it's impossible to implement all needs for future products, we have chosen for a main board and daughterboard concept. The main cost is concentrated in the main board. For all tooling and software developments, this main board will not change and so it will stay compatible.

As well for Melexis as for our customer, the software development cost and the time for evaluating a new product on this programmer is limited to the specific needs for the new products. On hardware level, this might ask for a different daughterboard. This concept also allows Melexis to providing custom made variants by a cheap, easy and fast solution.

## Main board

The main board is a stand alone tester. If we talk about mini tester, we mean a PTC04 on its own (without Daughterboard).

For all specification and description, electrical and mechanical, we refer to the [Ptc04\\_DataSheet.pdf](#). This document is always applicable, independent of the tested product. This documentation does not specify any information about the daughterboard!

## Daughter board

The daughter board is the interface between the PTC04 mini tester and the application. The simplest Daughter board is a few wires only. Standard the PTC04 is delivered without a daughter board. So when you order a PTC04 programmer you will need to order the dedicated daughter board for the product (or product group) for which the PTC04 will be used.

Melexis tries to develop the daughter boards on such a way it can support a group of products. A daughter board can easily be ordered by Melexis. The order code mentions the devices name or group that it can handle.

A daughter board is delivered with:

- The Daughterboard itself;
- A Replacement rear panel (is in function of the required connections);
- Documentation on this Hardware;
- A DLL library for using the product (or group of products) specific commands;
- Documentation on this software;
- User interface software to evaluate the products (This is not always delivered);

For documentation about the hardware of a daughter board, we like to refer to the document [Ptc04\\_DB\\_XXXXXX\\_DataSheet.pdf](#), where XXXXXX stand for the name of the daughter board. In this documentation you will find all details about connecting your application to the programmer.

## Contents of a PTC04 Set

What's in the box?

- PTC-04 without a daughter board
- Power supply
- Power cables, with European and American connector.
- RS232 serial cable
- USB cable
- Installation CD or Floppy
- Calibration certificate

## Software

As you can see in appendix A, the software is always structured in 4 levels. The highest level is the MPT which is not more than a toolbox for the user to make his life easy. Below you have the layer of the User Interfaces (UI), the Product Specific Function (PSF) level and finally the firmware layer.

### Firmware Layer

80 % of the firmware contains general function of the PTC04. Merged with this, there are module (product) specific commands. These commands are made to communicate with the specific MLX product.

It's important that the correct firmware is loaded in the PTC04 programmer. Software ID functions allow higher layers to check if the firmware can be used for that specific MLX product.

### PSF Layer (DLL)

All the interface items between host PC and Programmer are covered by the PSF layer. On this level a DLL makes all functions of the PTC04 and the MLX product available to the user.

The user can make a choice by using any programming language (Lab view, Visual C++, Visual Basic, Excel, etc...) to communicate with the DLL (PSF layer). When the user uses the interface program as delivered by Melexis, this layer is of no importance.

We always recommend the customer to connect his application software to the PSF layer. On this layer, all commands of the firmware are accessible.

Again, two different parts can be found:

- The General Function Library  
PTC04PSF:  
Installation: **PSF0PTC04AAMLX.exe**  
Documentation: **PTC04\_PSF\_Object\_Model.pdf** or **PSF0PTC04AAMLX.pdf**
- The Product Specific Function Library  
MLXxxxxxyPSF:  
Installation: **PSFxxxxxyMLX.exe**  
Documentation: **PTC04\_PSF\_MLXxxxx.pdf** or **PSFxxxxxyMLX.pdf**

Tip: Melexis can always provide example source codes in order to show how we program the interface between different instructions.

## Requirements

To install and use the MPT of the PTC04 on your system must have the following:

- NT 4.0, 2000, XP, Vista, Win7 or Win8
- A free serial port or a free USB port
- 50 Megabytes of free disk space
- Screen must have minimal resolution of 1024 x 768 with 16 bit colour.

## Installation of software

Installing the package from the CD:

- Start Auto-run program
- Press on the MLXxxxx button (xxxxx stands for the name of the product). It will install the whole package.

For information about how to install the software of the PTC-04 programmer, we refer to: **Installation\_Guide\_PTC04.pdf** and **Installation\_Guide\_USB.pdf**.

## Tools

Melexis provide several tools for free that will help you solving some questions or problems.

### MPT Platform

Melexis develops its software on a general platform (Melexis Programming Toolbox) that makes it easy to add new modules in the future. The MPT will guide and support the user in order to detect the correct programmers, the correct revision of firmware, to guide the user to the correct web update, to support the user using the correct tools like Calibration and firmware uploads. It also manages all delivered DLL. Installation File: **MPTApp.exe**

Documentation: **MPT.pdf**

### PTC04 User Interface

The PTC04 User Interface groups all tooling of the PTC04. The UI is installed together with MPT and the PTC04PSF but it is not mandatory for using the product specific function library.

Installation: **UI0PTC04AAMLX.exe**

Documentation: **PTC04\_UI.pdf**

#### *Firmware loader*

The firmware loader is needed in order to store new firmware into the PTC.

For information about how to use this tool, we refer to the documentation of the PTC04 User Interface. **PTC04\_UI.pdf**

#### *Calibrator*

The Calibrator is a tool that allows our customer to check the calibration of their programmer. The tool will verify the deviation on measurements and supplies. Optional it allows the user to calibrate these parameters. This last item requires a good calibrated voltmeter.

For information about how to use this tool, we refer to the documentation of the calibrator tool.

**User\_Manuel\_Calibration\_Software\_PTC04.pdf**

#### *Firmware Commander*

The firmware commander is a tool that is internally used by Melexis. This tool provides you an interface to play with basic commands like setting the power supplies and performing measurements.

This tool contains also a lot of software samples about how to implement some functions in your own software code. Ask your rep to get access to this tool.

For information about how to use this tool, we refer to the documentation of the PTC04 User Interface. **PTC04\_UI.pdf**

#### *Test Program*

The test program is made to perform a quick check of the hardware of the programmer. It checks the functionality of the fixed power supplies, programmable power supplies, the internal voltmeter, etc...

For information about how to use this tool, we refer to the documentation of the PTC04 User Interface. **PTC04\_UI.pdf**

## Validity and updates

Generally, Melexis provides all information on our Web Side. You can register yourself for free and you'll be able to get all updates and modification at any time.

Go to [www.melexis.com](http://www.melexis.com)

## CD PTC-04 directory structure

The above mentioned documents can be found on the CD of the PTC-04 in the following directories:

../

**Get\_Started\_With\_PTC04.pdf**

**FAQ.pdf**

../Application\_Notes

**ANMultiPTC.pdf**

**AN\_ActiveX\_PSF\_LabVIEW.pdf**

../MLXxxxxx/Documentation

**PSFxxxxxyMLX.pdf**

**UI\_xxxxxxyMLX.pdf**

../MLXxxxxx/Soft

**HISxxxxxyMLX.pdf**

../PTC04/Daughter\_Board/Documents

**Ptc04\_DB\_xxxxxx\_DataSheet.pdf**

../PTC04/Documents

**Get\_Started\_With\_PTC04.pdf**

**PTC04\_UI.pdf**

**PSF0PTC04AAMLX.pdf**

**User\_Manuel\_Calibration\_Software\_PTC04.pdf**

**Installation\_Guide\_PTC04.pdf**

**Ptc04\_DataSheet.pdf**

**HIS0PTC04HWMLX.pdf**

../PTC04/Soft

**HIS0PTC04AAMLX.pdf**

../PTC04/USB\_Driver/Documents

**Installation\_Guide\_USB.pdf**

../Tools/MPT/Documentation

**MPT.pdf**

**MPT\_DEVELOPER\_REFERENCE.HLP**

../Tools/Test\_Bench/Documentation

**Ptc\_Testbench\_Magnetic\_Datasheet.pdf**

**Ptc\_Testbench\_90316\_Datasheet.pdf**

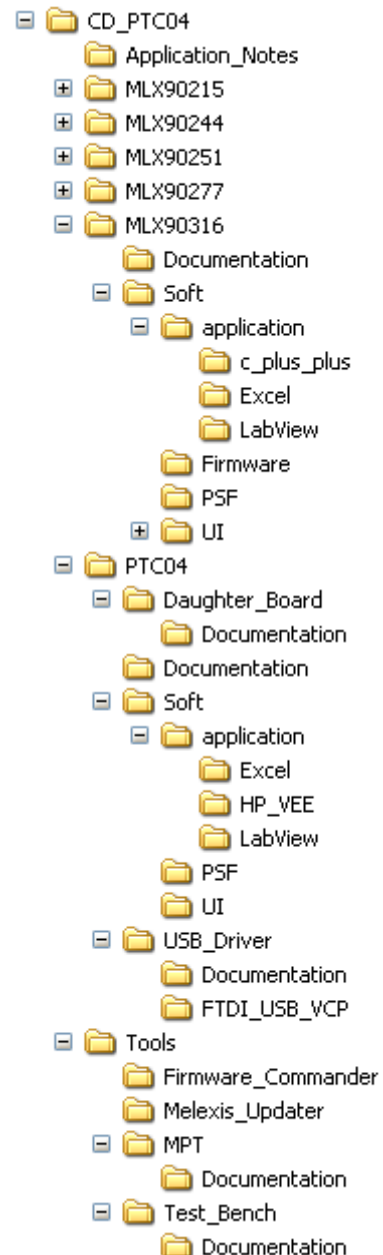
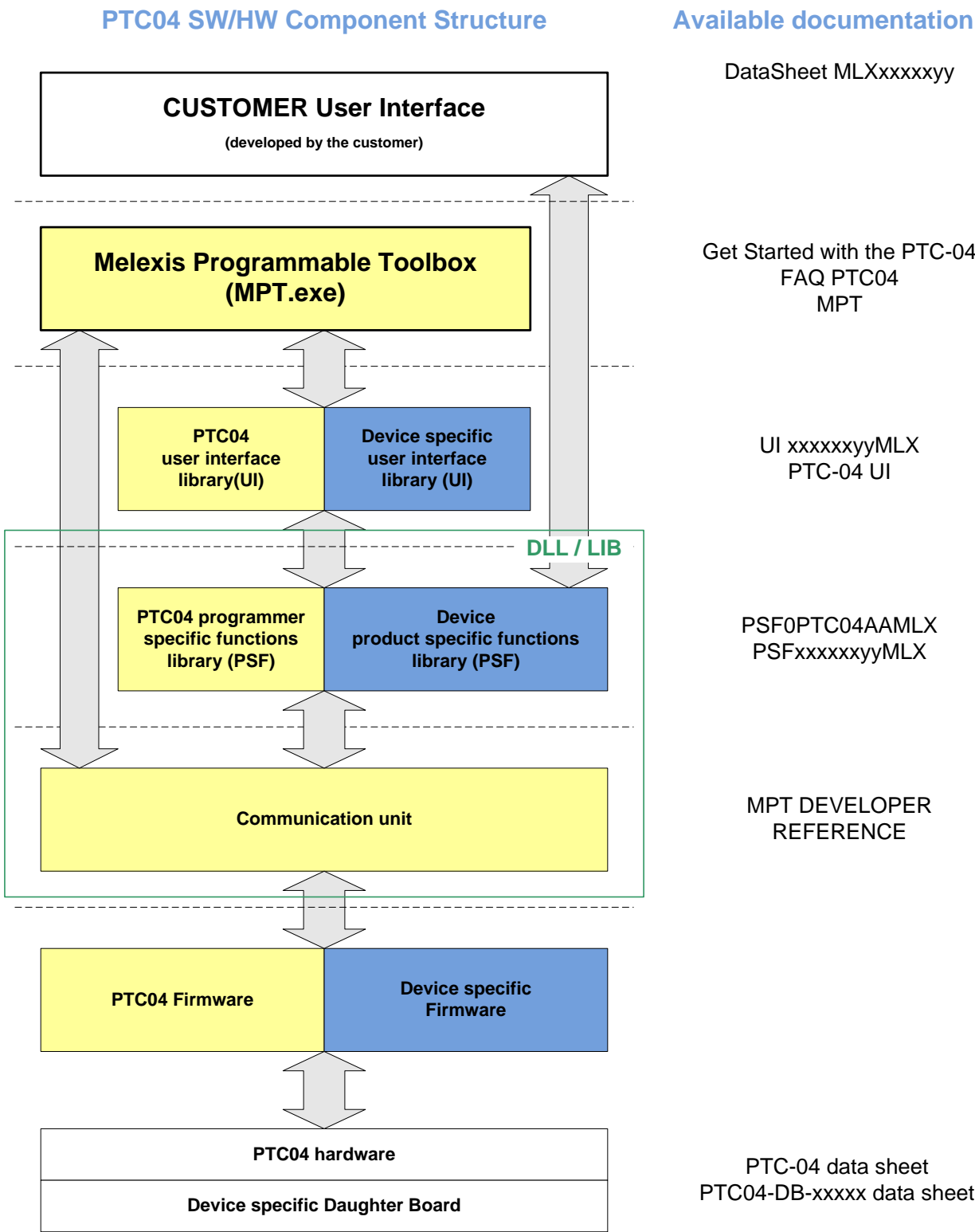


Figure 1: CD PTC-04

Appendix A: Structure of Software and Documentation



## Contact

For the latest version of this document, go to our website at [www.melexis.com](http://www.melexis.com).

For additional information, please contact our Direct Sales team and get help for your specific needs:

Europe, Africa	Telephone: +32 13 67 04 95
	Email : <a href="mailto:sales_europe@melexis.com">sales_europe@melexis.com</a>
Americas	Telephone: +1 603 223 2362
	Email : <a href="mailto:sales_usa@melexis.com">sales_usa@melexis.com</a>
Asia	Email : <a href="mailto:sales_asia@melexis.com">sales_asia@melexis.com</a>

## Disclaimer

*The information furnished by Melexis herein ("Information") is believed to be correct and accurate. Melexis disclaims (i) any and all liability in connection with or arising out of the furnishing, performance or use of the technical data or use of the product(s) as described herein ("Product") (ii) any and all liability, including without limitation, special, consequential or incidental damages, and (iii) any and all warranties, express, statutory, implied, or by description, including warranties of fitness for particular purpose, non-infringement and merchantability. No obligation or liability shall arise or flow out of Melexis' rendering of technical or other services.*

*The Information is provided "as is" and Melexis reserves the right to change the Information at any time and without notice. Therefore, before placing orders and/or prior to designing the Product into a system, users or any third party should obtain the latest version of the relevant information to verify that the information being relied upon is current. Users or any third party must further determine the suitability of the Product for its application, including the level of reliability required and determine whether it is fit for a particular purpose.*

*The Information is proprietary and/or confidential information of Melexis and the use thereof or anything described by the Information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights.*

*This document as well as the Product(s) may be subject to export control regulations. Please be aware that export might require a prior authorization from competent authorities.*

*The Product(s) are intended for use in normal commercial applications. Unless otherwise agreed upon in writing, the Product(s) are not designed, authorized or warranted to be suitable in applications requiring extended temperature range and/or unusual environmental requirements. High reliability applications, such as medical life-support or life-sustaining equipment are specifically not recommended by Melexis.*

*The Product(s) may not be used for the following applications subject to export control regulations: the development, production, processing, operation, maintenance, storage, recognition or proliferation of 1) chemical, biological or nuclear weapons, or for the development, production, maintenance or storage of missiles for such weapons; 2) civil firearms, including spare parts or ammunition for such arms; 3) defense related products, or other material for military use or for law enforcement; 4) any applications that, alone or in combination with other goods, substances or organisms could cause serious harm to persons or goods and that can be used as a means of violence in an armed conflict or any similar violent situation.*

*The Products sold by Melexis are subject to the terms and conditions as specified in the Terms of Sale, which can be found at <https://www.melexis.com/en/legal/terms-and-conditions>.*

*This document supersedes and replaces all prior information regarding the Product(s) and/or previous versions of this document.*

*Melexis NV © - No part of this document may be reproduced without the prior written consent of Melexis. (2016)*

*ISO/TS 16949 and ISO14001 Certified*